

Plant Diversity and Fire?

Which habitat video: Pine Rockland

Subject: Reading, Writing, Biology: Plants, Fire Ecology,

Environment

Duration: 2-3 hours or class periods

Group Size: Up to 24 (4-8 breakout groups)

Setting: Classroom

Grades: 4-6

Standards:

Common Core: LACC.4.RI.1.3, LACC.4.SL.1, LACC.4.SL.1.2, LACC.4.W.3.8, LACC.4.W.3.9, LACC.4.RI.3.7, LACC.5.SL.1.2, LACC.5.SL.2.4, LACC.5.W.3.8, LACC.6.SL.1.2, LACC.6.RI.3.7, LACC.6.W.1.2

NGSSS: SC.4.N.1.1, SC.4.L.16.2, SC.5.L.17.1, LA.4.1.7.4, LA.5.1.7.4, LA.5.5.2.2, LA.5.6.3.2, LA.6.1.7.4, LA.6.6.2.2

Vocabulary: Miami Rock Ridge, aquifer, limestone, snag, fire dependent, underground tuber, plant diversity, solution hole, understory, endangered habitat, remnant

Objective(s)

Guiding Question: What is plant diversity and how does fire help it?

Critical Content: Learn why fire is crucial to the survival of the Pine Rockland habitat.

Materials

- Chart paper
- Poster board
- Art supplies (markers, crayons, and/or colored pencils)
- Computer with internet access
- Journal
- Pencil

Student Objectives: Students will explain plant diversity and the importance of fire in the Pine Rockland habitat.

Method Students will begin by discussing their prior knowledge about diversity and what this means in the world of plants in order to generate questions about plant diversity and the role of fire within the Pine Rockland habitat. Following this discussion, they will watch the Pine Rockland video to gather information they will use to create a poster as their culminating activity.

Background The exposed limestone which creates the floor of the Pine Rockland habitat is part of the Miami Rock Ridge. The Miami Rock Ridge is an area of Florida comprised of elevated limestone which creates a higher and drier area as compared to the other habitats within the Everglades. This limestone is a porous rock that acts as a natural filter for water. Rainwater is filtered through the limestone and collects into the aquifer located below the Everglades, creating a pool of clean and fresh water. This aquifer is an important source of water for the plants and animals in and around the Everglades, including people. Once collected, humans can pump it out of the aquifer for various uses around our state.

Suggested Procedures

- Prior to viewing the video, explain the overall components of the Pine Rockland habitat. Explain the role of the Miami Rock Ridge, limestone, and the aquifer that lies beneath the limestone.
- Engage students in a discussion about what they think of when they hear the term diversity.
- Create a K-W-L (What I **K**now, What I **W**ant to Know, What I **L**earned) chart on chart paper and fill in the K section of the chart.
- Introduce the concept of plant diversity and begin a discussion about what this means in the Everglades. Then ask students why fire might be an essential part of a habitat. Work with students to create a list of topics they would like to know about plant diversity and the importance of fire in the Everglades. Add these topics under the W section of the K-W-L chart.
- List the following words on the board and have students write them down either in a journal or separate sheet of paper: snag, fire dependent, underground tuber, solution hole, understory, endangered habitat, and remnant. Explain to students that as they watch the video, they will write down their own interpretation of the meanings of these words.
- Play the Pine Rockland video for the class located at the following web address:
<http://www.nps.gov/ever/photosmultimedia/mountainsandvalleys.htm>.

- Allow students to complete their vocabulary interpretations. Discuss each word and have students explain their significance in the Pine Rockland habitat.
- Discuss what they learned from the video and add this information to the L section of the K-W-L chart.
- As a culminating activity, students will use the vocabulary words to explain what plant diversity is and why fire is essential in the Pine Rockland habitat by creating a poster. Divide the class into groups of 4. Each person in the group will be responsible for a different element of the project. This poster must include the following elements:
 - Definitions for each of the vocabulary words which includes a picture that depicts its meaning: snag, fire dependent, underground tuber, solution hole, understory, endangered habitat, and remnant
 - Pictures of at least three of the plants within the Pine Rockland habitat with a student developed explanation of how each plant is fire dependent.
 - A cause and effect chart that explains at least three specific effects of the lack of fire in the Pine Rockland habitat.
 - A summary that provides a detailed explanation of why fire is important in the Pine Rockland habitat, using specific details from the video in their explanation.

Evaluation *Plant diversity and fire?* poster presentation- Students should be able to accurately and effectively present their posters and discuss the information contained on the posters without reading from it.

Extension Students can research the Pineland Croton plant and determine the two species of Everglades' butterflies that are dependent on this plant. Students will then develop a cause and effect chain hypothesizing what would happen if the Pineland Croton becomes extinct.

Making A Poster: Plant diversity and fire?

Teacher Name: _____

Student Name: _____

CATEGORY	4	3	2	1
Graphics - Clarity	Graphics are all in focus and the content easily viewed and identified from 6 ft. away.	Most graphics are in focus and the content easily viewed and identified from 6 ft. away.	Most graphics are in focus and the content is easily viewed and identified from 4 ft. away.	Many graphics are not clear or are too small.
Graphics - Originality	Several of the graphics used on the poster reflect a exceptional degree of student creativity in their creation and/or display.	One or two of the graphics used on the poster reflect student creativity in their creation and/or display.	The graphics are made by the student, but are based on the designs or ideas of others.	No graphics made by the student are included.
Attractiveness	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed. It is not attractive.
Labels	All items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Almost all items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Several items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Labels are too small to view OR no important items were labeled.
Required Elements	The poster includes all required elements as well as additional information.	All required elements are included on the poster.	All but 1 of the required elements are included on the poster.	Several required elements were missing.
Knowledge Gained	Student can accurately answer all questions related to facts in the poster and processes used to create the poster.	Student can accurately answer most questions related to facts in the poster and processes used to create the poster.	Student can accurately answer about 75% of questions related to facts in the poster and processes used to create the poster.	Student appears to have insufficient knowledge about the facts or processes used in the

				poster.
Content - Accuracy	At least 7 accurate facts are displayed on the poster.	5-6 accurate facts are displayed on the poster.	3-4 accurate facts are displayed on the poster.	Less than 3 accurate facts are displayed on the poster.
Mechanics	Capitalization and punctuation are correct throughout the poster.	There is 1 error in capitalization or punctuation.	There are 2 errors in capitalization or punctuation.	There are more than 2 errors in capitalization or punctuation.
Grammar	There are no grammatical mistakes on the poster.	There is 1 grammatical mistake on the poster.	There are 2 grammatical mistakes on the poster.	There are more than 2 grammatical mistakes on the poster.